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China's Debt Revisited

Lixin Sun¹

Abstract: This paper updates the dataset on the structure of China's debt published in Sun (2015, 2019) with the debt effects. The new dataset extends the sample to the end of 2018 including the collected annual and the estimated quarterly data covering the period 1985-2018, and presents the updated changes in deleverage ratios for all debt categories in China. In addition, we examine the effects of the debt on the monetary policy transmission and the macroeconomy in China with the GMM approach and a VAR model. We find that the monetary policy transmissions have been weakened in times of high indebtedness by both the public and the private debt despite at the heterogenous magnitude. Our study sheds new lights to policy design and debt management in China.

Keywords: China's Debt Dataset; Non-financial Private and Public Debt; Monetary Policy Transmission; GMM Approach; VAR Model; Chinese Economy

JEL Code: H63, E20, E50

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China's Debt Revisited

1. Introduction

Recently, China's debt problem has attracted considerable concern due to the rapidly expanded leverages in its public sector and non-financial private sector. Empirical studies on China's debt issues needs a detailed debt data of Chinese economy, however, the exiting notable worldwide debt datasets are often limited to a small set of categories and a short time horizon for China's debt data. To fill this gap, Sun (2015, 2019) compiled a comprehensive and long series debt database for China over the period 1985-2015. This paper updates the dataset in Sun (2015, 2019) with the debt effects. The new dataset extends the sample to the end of 2018 including the collected annual and estimated quarterly data covering the period of 1985-2018, and presents the updated changes in deleverage ratios for all debt categories in Chinese economy. In addition, we examine the effects of the (over) indebtedness in public and private sectors on monetary policy transmission and the macroeconomy in China.

Our main contributions in this paper can be summarized by several points. First, the updated dataset of Chinese debt is extended to the end of 2018 from 2015 and is completed by providing all the missing data for the period 1985-2018, which tracks the development of all categories of China's debt including public debt, non-financial private debt and financial debt domestically, and the external debt to the rest of the world and covers the longest period up to now. Second, we disaggregate the annual data into the longest quarterly debt series in this update, which provides powerful toolkits for the deep research on China's debt problem. Third, with GMM estimations, we find that the over-indebtedness in both

public and non-financial private sectors have weakened the effects of monetary policy although the magnitude is different. Also, the public and private debt do affect Chinese macroeconomic activities including consumption, investment, and public expenditure. Fourth, our robustness checks from a VAR model support these findings. Our study sheds new lights to debt management and monetary policy implementations in China.

The remaindering structure of the paper is organized as follows. Section 2 discusses the related literature. Section 3 presents the details of the updated China's debt dataset. Section 4 examines how the over-indebtedness in public sector and non-financial private sectors influence the transmissions of monetary policy, and investigates the effects of the high leverages on Chinese real economic activities in China. Section 5 provides robustness checks for the effects of debt and over-indebtedness using a VAR model. Section 6 makes the conclusive remarks.

2. Literature Review

To understand the mechanism of debt economics, economists and institutions have constructed many useful debt databases, especially on public debt. For example, Missale (1999) constructed a public debt database covering 18 advanced economies during 1960–96. Flandreau and Zumer (2004) collected public debt-to-GDP data for 15 European countries and two Latin American countries from a variety of data sources to study the “first era of globalization” (1880–1913) and its evolution. Guscina and Jeanne (2006) compiled a detail database on emerging economy public debt covering 19 emerging economies during 1980–2002. To analyse the episodes of debt cycles and financial crises, Reinhart and Rogoff (2009) collected a debt data set for 70 countries spanning an exceptionally long time period.

Abbas and Christensen (2010) built a public debt database on 144 LICs and emerging countries for 1970–2007, relying mainly on IFS data. One of the most notable comprehensive public debt database, “A Historical Public Debt Database” (IMF, linked to the IMF World Economic Outlook (WEO) database), compiled and updated by Abbas et al. (2010), covers nearly the entire IMF membership (174 countries) and spans an exceptionally long time period. This database brings together a number of other datasets and information from original sources. Another notable contribution is made by the Bank for International Settlement (hereafter BIS) Statistics (2013), which has compiled exceptionally long-run series of total credit to non-financial private sectors from 1940 and has been continually updated to present for 40 advanced and emerging market economies (including China). It collected the quarterly data from the national central banks and covered the credits from all sources. The third notable debt database is built up and updated by Clemons and Vague (2012), which includes both public debt and private debt for 19 biggest economies around the world. Although such abovementioned debt databases include China, they were often limited to a small set of categories or to a short time horizon. To fill this gap, Sun (2015, 2019) compiled a comprehensive and long series debt database for China over the period 1985-2015, this paper extends the sample in Sun (2019) from 1985 to the end of 2018 by including the collected annual and the estimated quarterly data for the entire period of 1985-2018, and thereby provides a complete dataset for nearly all debt categories in China. Based on this dataset, especially its long quarterly series, more deep studies can be conducted to explore the roles, effects and the determinants of China’s debt.

Leverage is a double-edged sword. On the one hand, a sustainable debt level for both

the public sector and the non-financial private sector is not only the precondition but also the routine measures for improving public service and fostering economic growth. On the other hand, the over-indebtedness could lead to default and bankruptcy, depressing the economic growth, producing economic instability and fluctuations, even could be followed by crises and disasters. Traditional studies regarding the effects of over-indebtedness on the macroeconomy concentrate on the effects of public debt, especially when higher public debt-to-GDP is the consequence of expansional fiscal policy to stimulate aggregate demand, it could promote the output in the short run, but crowds out private capital spending and reduces output in the long run. Recent notable literature including Reinhart and Rogoff (2010) and Cecchetti et al. (2011), they generally used panel analysis to investigate the debt-growth nexus for most advanced economies and emerging economies. Differing from them, our paper focuses on the detailed nexus between sectoral debt level and economic activities, such as the effects of household debt on consumption, the effects of non-financial corporate debt on private investment, and the effects of public debt on public expenditure in China.

Recently, an important application in analysing debt effects is to examine if the high debt accumulation after 2008 affect monetary policy transmission, especially from the perspective of empirical investigation. Alpanda and Zubairy (2017) used state-dependent local projection methods to measure how the household indebtedness influences the monetary transmission mechanism in the U.S. economy. They find that the effectiveness of monetary policy is weakened in times of high household indebtedness. Their results show that the impact of monetary policy shocks is less powerful on GDP, consumption, residential investment, house prices and household debt through the home-equity loan channel during

a high-debt state. Using quarterly household-level (micro) data from the U.S. Consumer Expenditure Survey (CEX) from 1996 to 2014, Gelos et al. (2019) compared the responsiveness of household consumption to monetary policy shocks in the pre- and post-crisis periods to explore the link of household indebtedness and monetary policy transmission in US. Their results suggest that the impacts of monetary policy shocks on household consumption have diminished since the international financial crisis of 2008, while household debt did not lessen the effects of monetary policy over time because households with the highest indebtedness respond most to monetary policy shocks. Unlike above empirical works, we examine the effects of monetary policy shocks on household consumption, non-financial firm investment, and public expenditure during two states switching from low debt level to high debt level. In this sense, our study provides new insights and certain interesting implications.

3. China's Debt Dataset: An Update

China's debt data in Sun (2015,2019) were collected from every possible source including official publications and individual literature, the databases compiled by IMF, BIS, World Bank, and China's Statistical Authorities, regarding academic papers, and consultant reports. In this update, we extend the sample period to the end of 2018 and estimate missing annual data and all quarterly data by econometric techniques to complete the dataset for the entire period of 1985-2018.

The updated dataset still consists of four categories: public debt at the general government level including the central government and local governments, non-financial private debt composing of household debt and non-financial corporate debt, the financial

sector debt, and the international debt.

The shares of China's aggregate debt level in terms of external and domestic borrowers remained stable over time, China's total debt is dominated by the domestic debt because the external debt has never exceeded 5% (Figure 1). Concentrating on the domestic debt, the shadow banking is minimal prior to 2002, since then it had increased dramatically, accounting for 11% at the end of 2018, which caused severe concerns. In contrast, the share of debt for financial sector declined gradually, while the share of non-financial private debt changed relatively minimally from 1985 to 2018. Figure 2 summaries the evolutions in the shares of domestic debt in China.

Figure 1 Shares of China's Debt in Terms of External and Domestic Sources

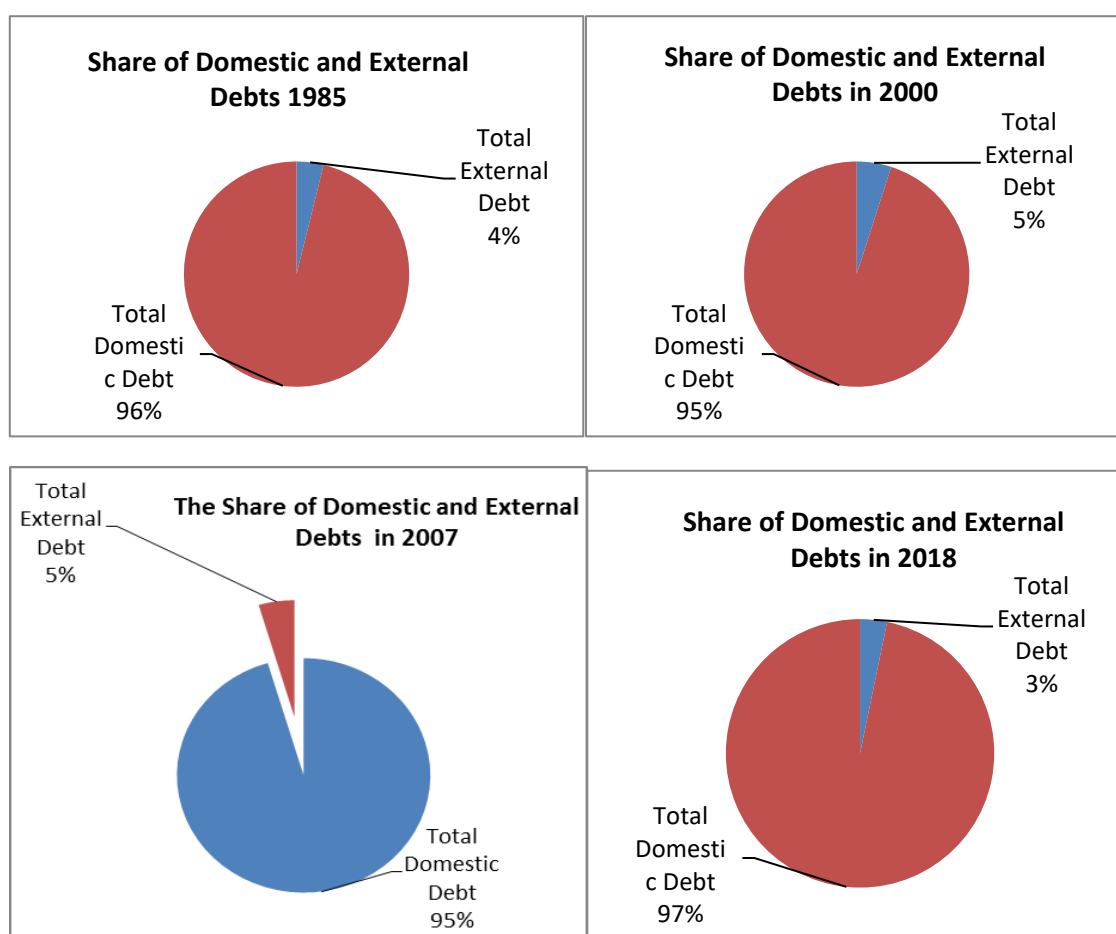
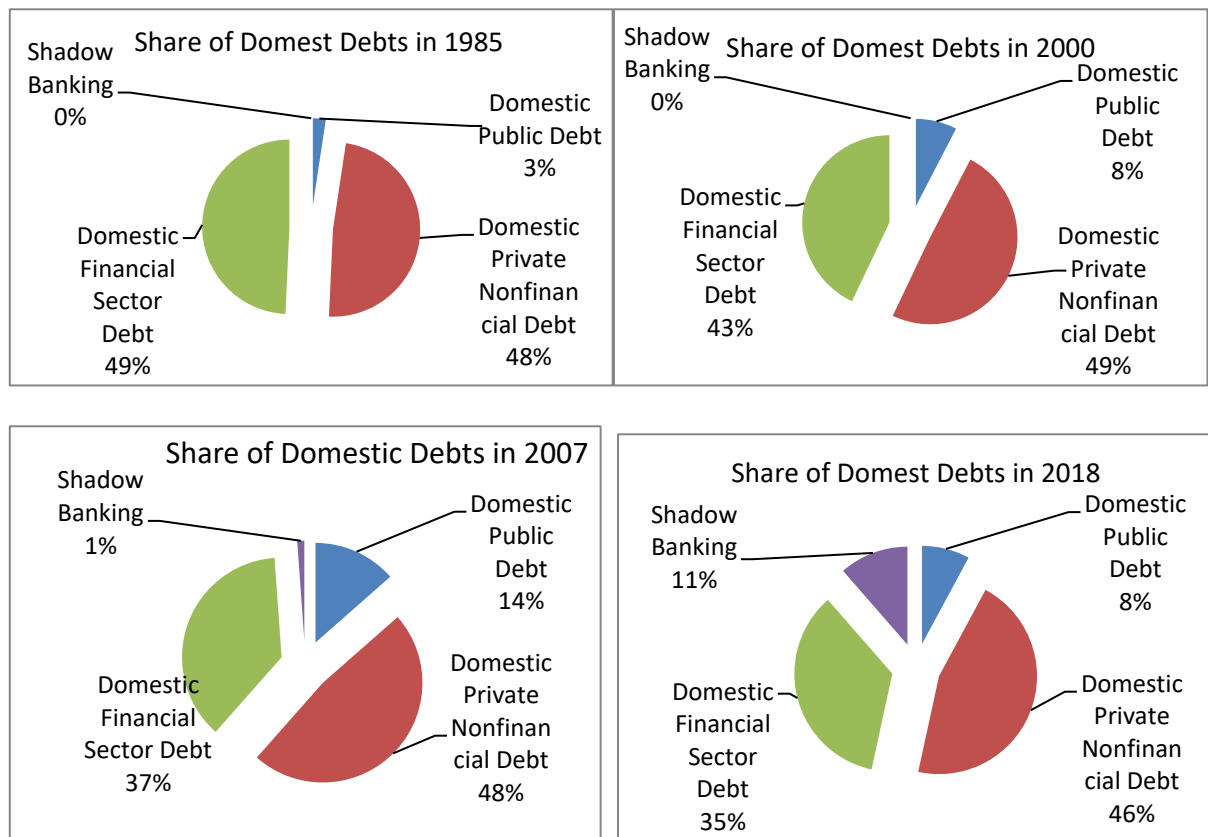


Figure 2 Shares of Domestic Debt in China

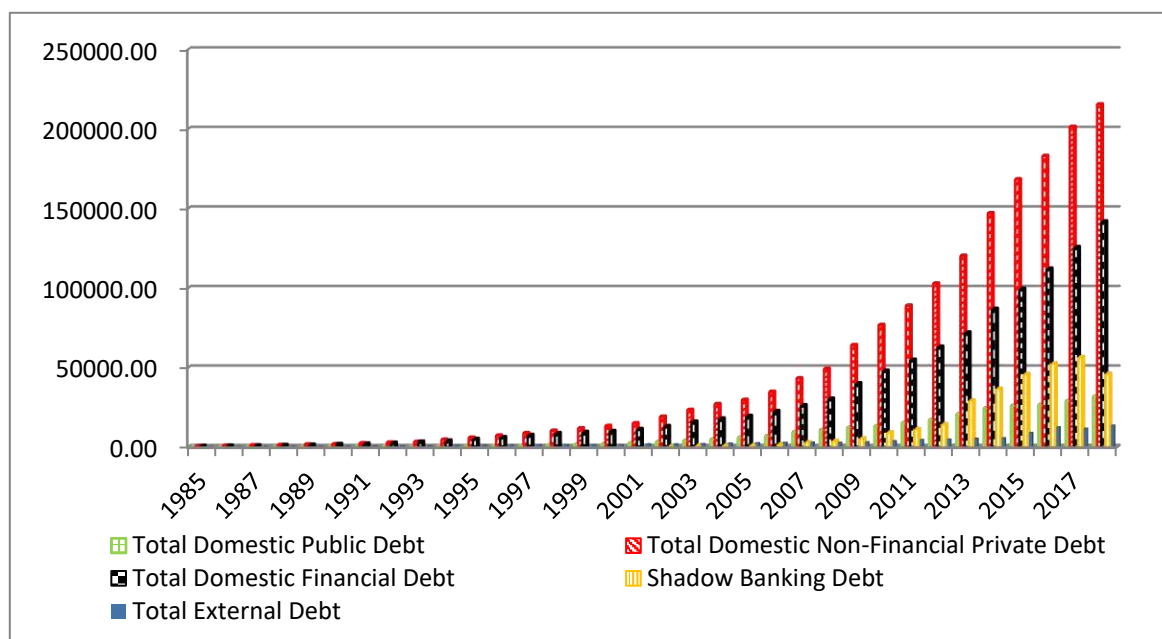


Source: Author's Dataset

Figures 3 and 4 update the China's aggregate debt level by sector. At the end of 2018, total debt is 416,598.26 billion yuan (RMB, Chinese national currency), which accounts for approximately 462.7% of GDP, increasing approximately 318 times compared with the level at the end of 1985 with annually increasing more than 9 times averagely. In particular, the non-financial private debt provided the greatest contribution to the rapid growth of total debt level (relative to GDP), rising from approximately 70.1% of GDP in 1985 to approximately 239.1% of GDP in 2018, growing averagely with the annual rate at 5%. In addition, all sectoral debt levels were mild prior to 2008, afterwards exhibited remarkably rising momentum, which resulted from the stimulus package weathering the global financial crisis including extremely easy monetary and fiscal policies. In Figure 4, it is worthy of

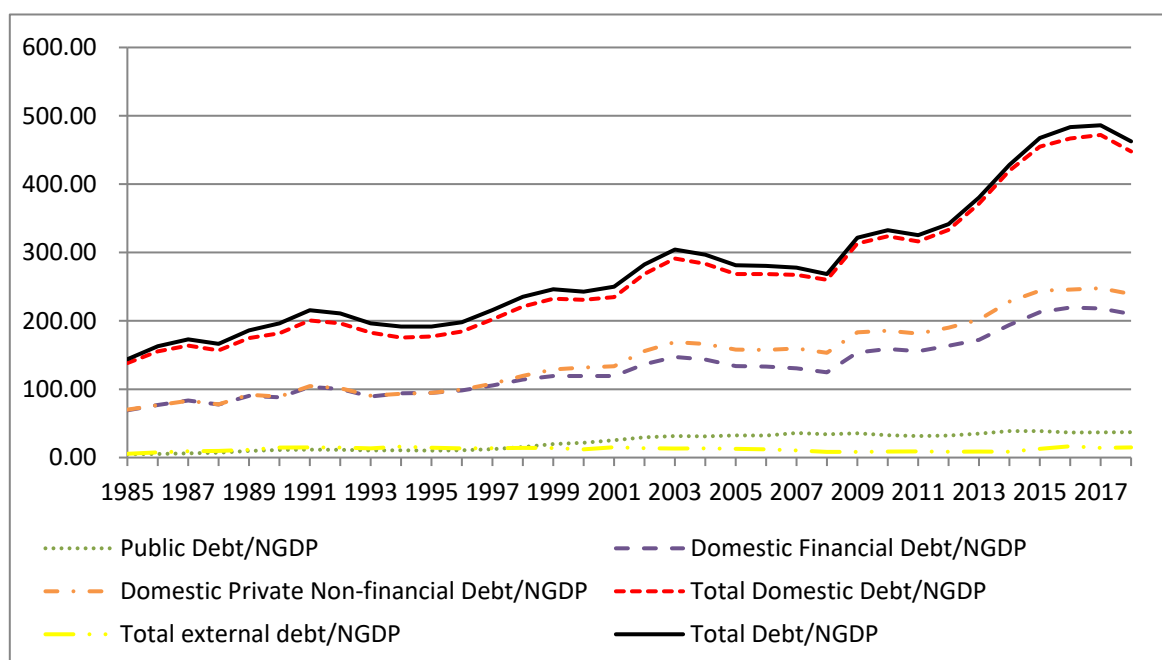
noting that the peaks of debt levels for all sectors emerged in 2016, since then all sectoral debt ratios had subdued due to the deleveraging policy implemented by Chinese central government. Table 1 in the Appendix presents the updated annual data for all sectors.

Figure 3 China's debt by sector (Unit: Billion RMB Yuan)



Source: Author's Dataset

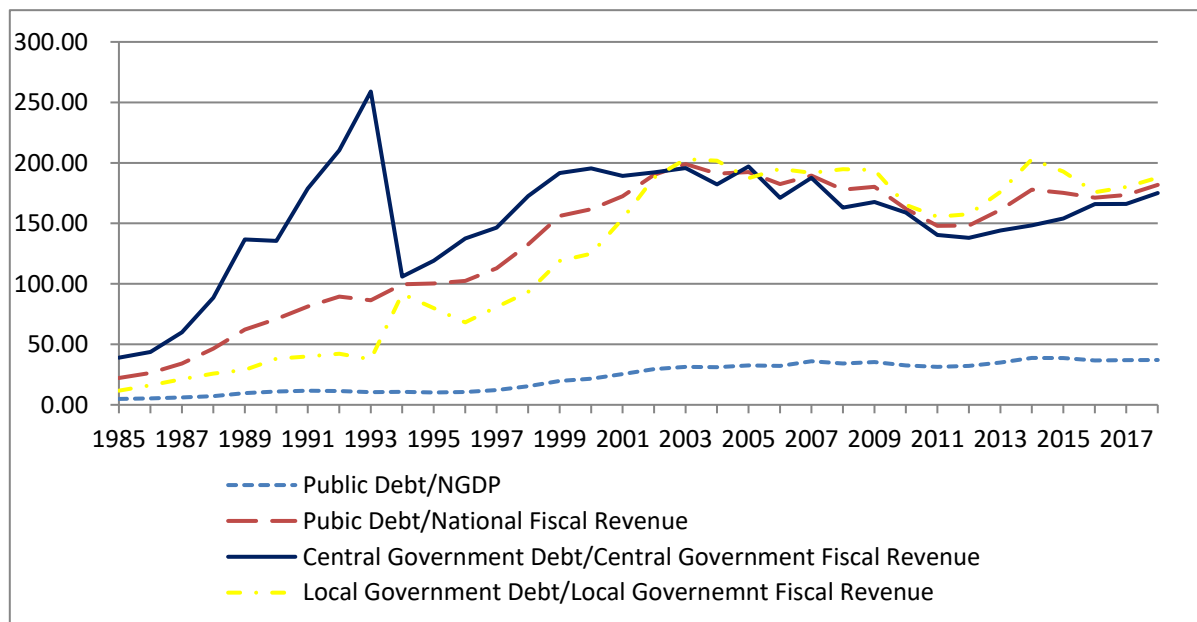
Figure 4 Ratios of debt to nominal GDP (percentage) by sector



Source: Author's Dataset

In the updated dataset, the annual local government debt for the period 1985-1998 were estimated referring to the database of debt economics by Vague (2019). The detailed debt level for provinces after 2015 were collected from the database of the Ministry of Finance of the PRC. Figure 5 plots the public debt level of Chinese general government including the central government and local governments for the period 1985-2018. It shows that the ratios of the public debt to GDP subdued and remained below 50% after 2015, while the ratios of public debt to fiscal revenues were still higher than 160% despite the recent falls after 2014.

Figure 5 Changes in the Public Debt Level for 1985-2018



Source: Author's Updated Dataset

Figure 6 depicts the ratios of local debt to local GDP and to local fiscal revenue by region in 2015 (Panel A) and 2017 (Panel B). Comparing the data in 2017 with that in 2015, we find that the debt levels in several provinces deteriorated: Qinghai, Tianjin and Neimenggu, whereas the debt burdens in Beijing, Liaoning and Zhejiang modified. Particularly, the provinces with the ratios of local debt to local fiscal revenue higher than

200% include Qinghai (614.37%), Ningxia (293.65%), Guizhou (533.33%), Shaanxi (268.87%), Gansu (253.59%), Xinjiang (230.33%), Yunnan (356.52%), Sichuan (237.48%), Guangxi (299.47%), Hainan (255.04%), Hunan (278.03%), Liaoning (353.37%), Neimenggu (365.04%). These provinces would be given continuously more concerns by the regulators.

Non-financial private debt has caused great concerns due to their undergoing rapid increases relative to their revenues (disposable incomes) recently. In particular, both the ratios of household debt to GDP and to disposable income are continually rising, which produces new risk and causes more concerns recently. However, fortunately we find that the private debt levels measured by the ratio to GDP in the firm sector and in the entire non-financial private sector have begun to fall since 2016. Figure 7 presents the evolutions in the non-financial private debt levels from 1985 to 2018.

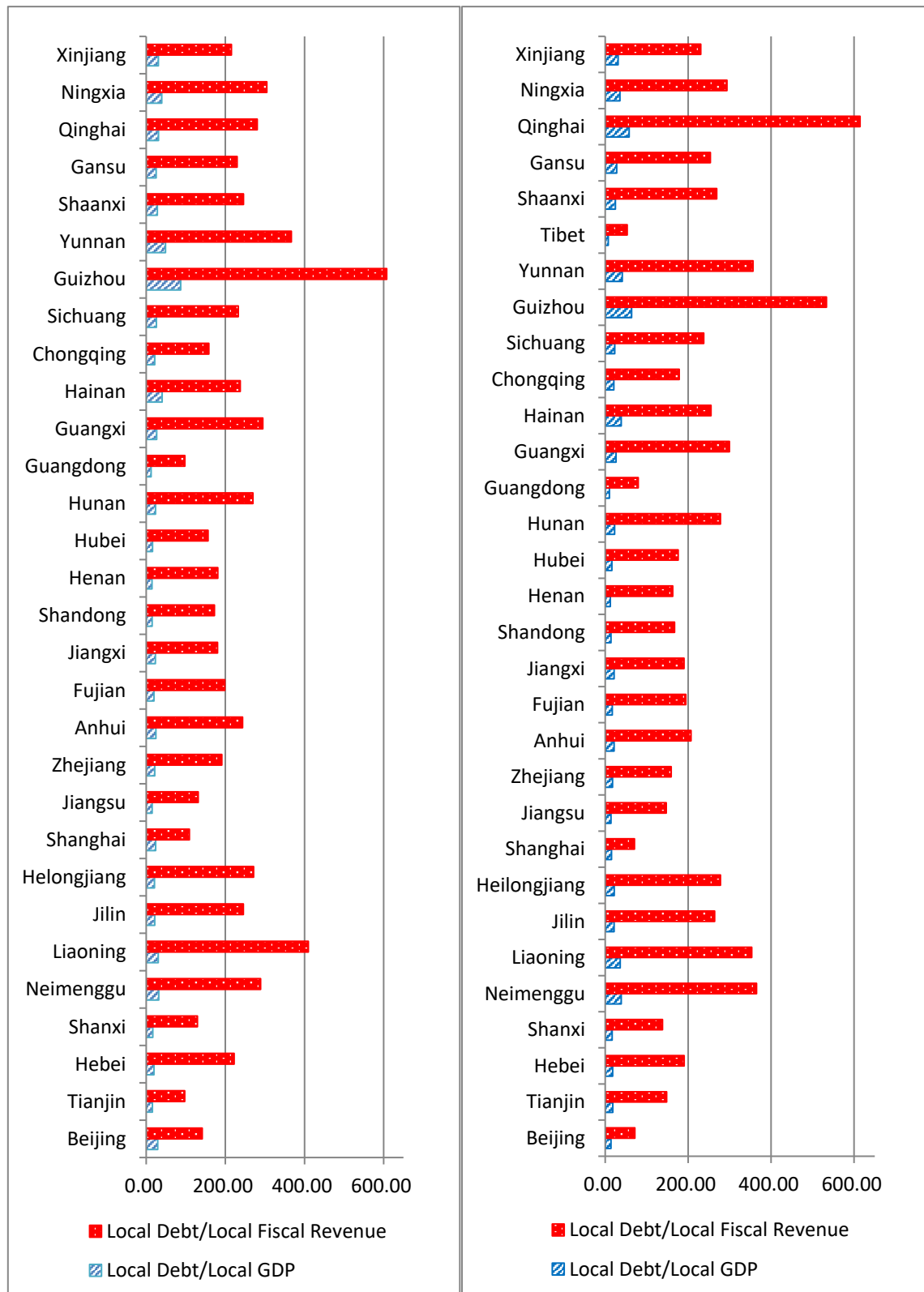
Shadow banking is an important focus in analysing the systemic risk in China's financial system. We've complemented the relevant data for this special sector from 2002 to 2018, covering almost the complete developing period of shadow banking until now in China. Figure 8 updates the debt level in financial sector including the shadow banking. It reflects that the risk arising from the shadow banking has fallen since 2016 due to the consolidating and reorganizing measures taken by Chinese regulating authorities.

External debt level is minimal compared with domestic debt level, although the short-term external debt has picked up since 2015. Figure 9 summarizes the updated foreign debt ratios.

Figure 6 Debt/GDP and Debt/Fiscal Revenues Ratios by Region, 2015 and 2017

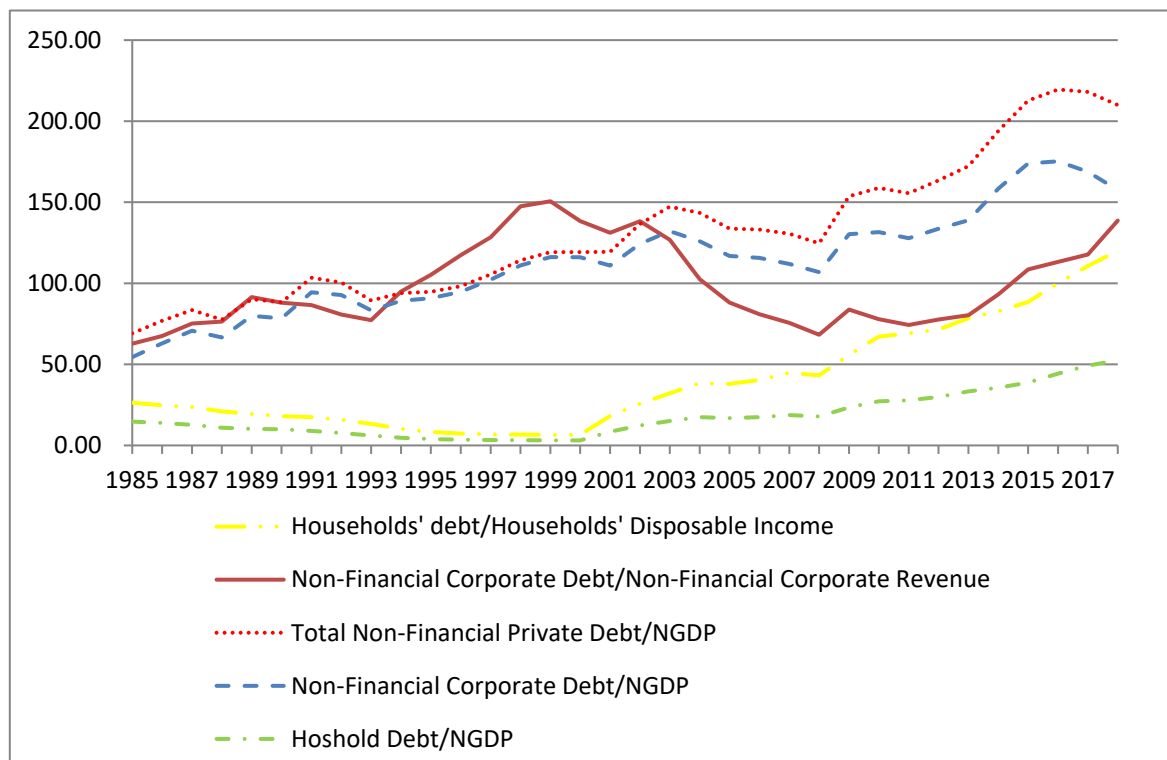
Panel A End of 2015

Panel B End of 2017



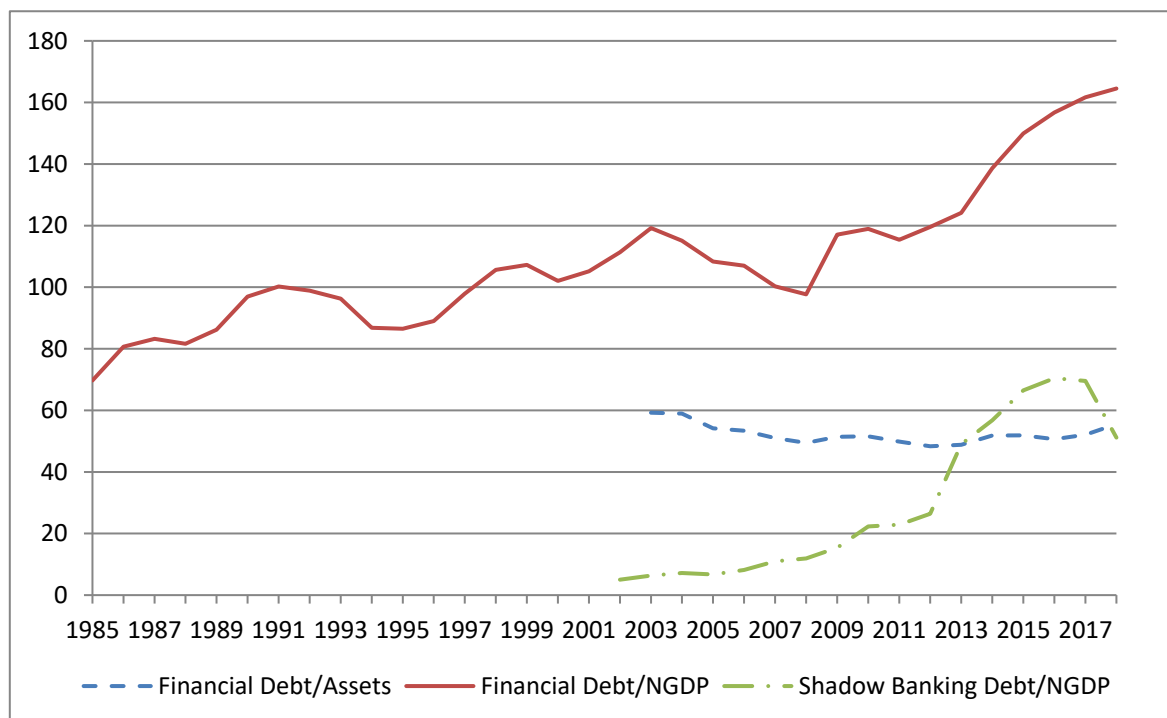
Source: Author's Dataset

Figure 7 Changes in the Non-Financial Private Debt Levels



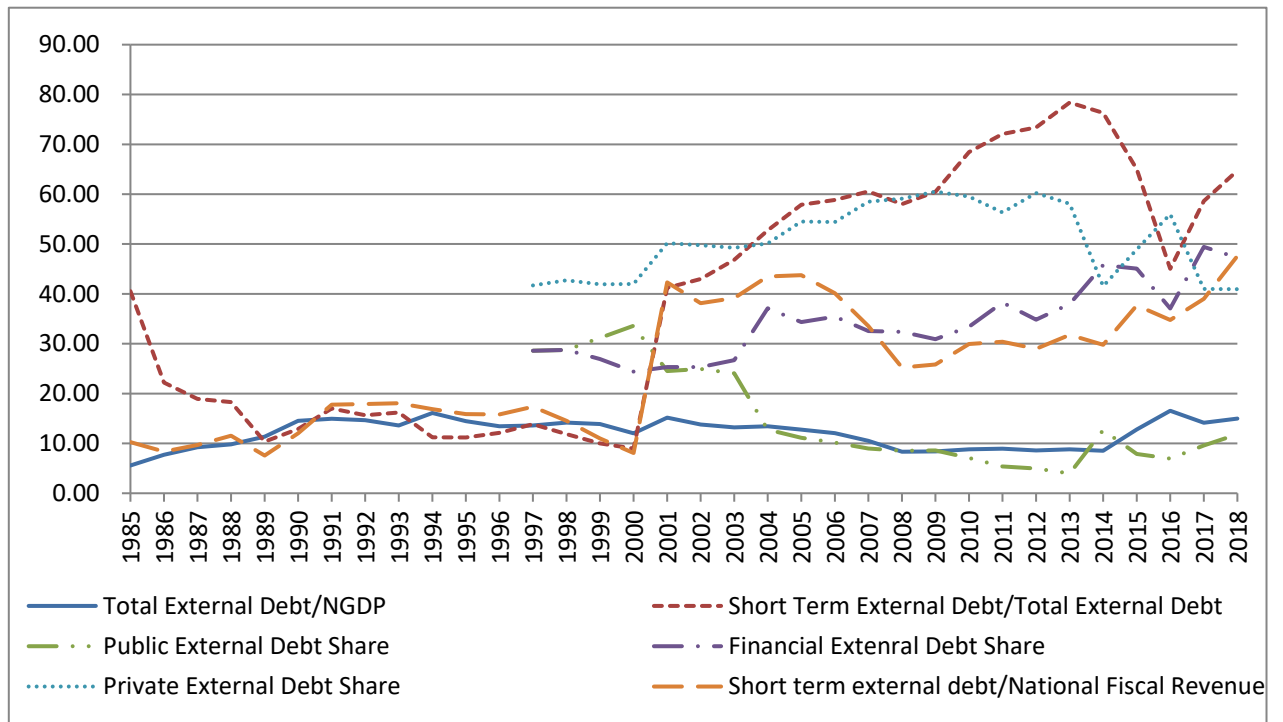
Source: Author's Dataset

Figure 8 Debt Level in Financial Sector Including Shadow Banking



Source: Author's Updated Dataset

Figure 9 The External Debt Levels (1985-2018)

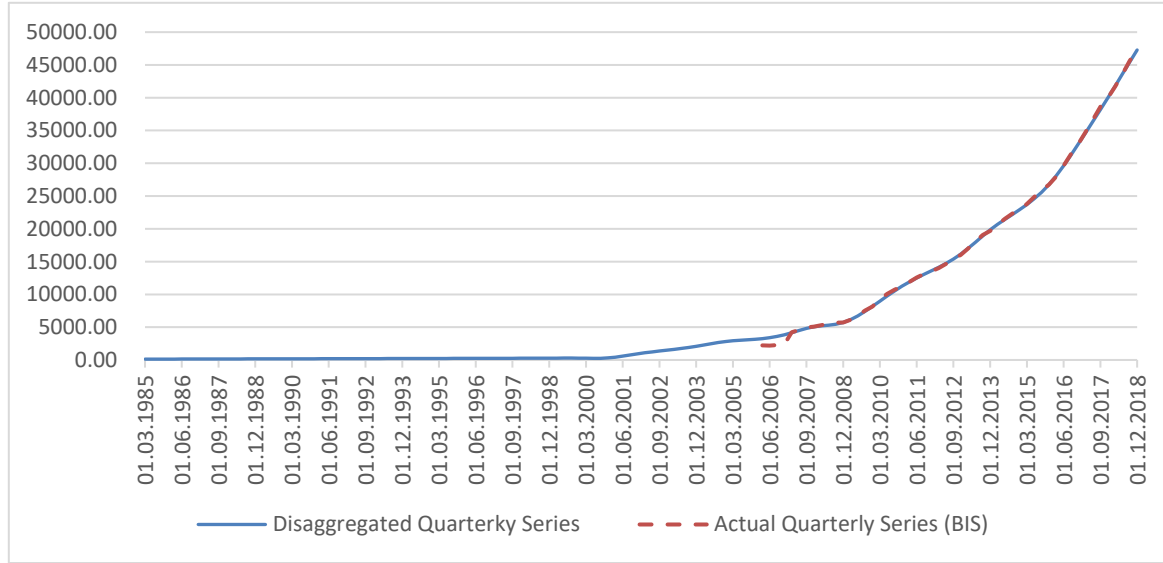


Source: Author

Finally, in the updated dataset we've estimated the quarterly series of debt for all categories covering the entire sample period using the approaches in Boot et al. (1967) and Denton (1971), in terms of which all the annual data were disaggregated into the quarterly data. Taking the household debt as an example, Figure 10 exhibits the disaggregated quarterly data for the period 1985q1-2018q4 with the quarterly data collected from the database of BIS (2019), which started only from 2006q1 and were provided by the People Bank of China (Chinese central bank). Comparing two quarterly series in Figure 10, the conclusion can be drawn that our disaggregated quarterly data are consistent with the actual data and thereby are reliable.

The leverage ratios for all sectors calculated based on the quarterly debt data in the updated dataset are reported in Table 2 in the Appendix.

Figure 10 The Disaggregated Quarterly Series with the Actual Series (Household Debt)
(Unit: Billion Yuan RMB)



Source: Author and BIS (2019)

4. Debt Effects and Monetary Policy Transmission

4.1 Methodology

To measure the effects of debt on the monetary policy transmission, first, we employ a simple regression equation to identify the effective monetary policy instrument in the transmission of monetary policy in China:

$$y_t = \alpha y_{t-1} + \beta x_t + \rho mi_t + \varepsilon_t \quad (1)$$

where y_t denotes the explained macroeconomic variable of interest, such as the output growth, the consumption growth, the investment growth, and the public spending growth, etc. mi_t represents the chosen monetary policy instruments that include the growth rate of broad money, the required reserve ratio, the inter-bank interest rate and the lending rate. x_t is the vector of macro control variables consisting of the p.c. GDP and the CPI inflation rate. α, β , and ρ are relevant coefficients. ε_t is the error term which is *IID*.

Second, to examine the monetary transmission in China in the presence of the over-indebtedness, we add a dummy variable, labeled odd_t , which represents the period of over-indebtedness in the regarding sector and interact it with the monetary policy instrument, into Equation (1):

$$y_t = \alpha y_{t-1} + \beta x_t + \rho mi_t + \delta d_t + \theta odd_t \times mi_t + \varepsilon_t \quad (2)$$

In Equation (2), d_t denotes the debt level (ratio to GDP), coefficient δ measures the effects of debt on real economy. odd_t is a dummy variable which takes 1 for the periods of high indebtedness, 0 for other periods. More importance, θ captures the additional effects of over-indebtedness on the transmission of China's monetary policy.

To avoid the endogeneity in above equations, we use the Generalized Method of Moments (GMM) approach to conduct our estimations.

4.2 Identifying Effective Instruments of China's Monetary Policy

First of all, using Equation (1) with the GMM approach, we conduct a simple regression to identify the effective instruments of China's monetary policy that affect consumption, investment, and public spending. Thus, the growth rates of consumption, public spending, and investment are respective dependent variables in the regression. The tool box of China's monetary policy consists of the inter-bank rate, the broad money (M2) growth, the required reserve ratio (RRR), and the lending rate. The exchange rate is excluded because we don't consider the international trade and the rest of the world. We choose the p.c. GDP as control variable in estimating consumption growth and the CPI inflation rate as control variable in estimating investment and public spending growths.

Table 3 in the Appendix summarizes the effects of China's monetary policy instruments

on the consumption growth. The results suggest that the interest rates and the required reserve ratios do influence the growth of consumption, and the impacts of the M2 growth on consumption are insignificant.

Similarly, Table 4 in the Appendix reports the results for the case of investment, in which the growth rate of M2 significantly affects the investment growth, whereas the effects of the interest rates and the required reserve ratios (RRR) are insignificant. Table 5 in the Appendix presents the case for public spending growth, in which the growth rate of M2 and the required reserve ratios have important impacts on the growth rate of public spending.

Hence, we choose the interest rates, the growth rate of M2, and the RRR as effective instruments on the growth rates of consumption, investment and public spending, respectively, to investigate the impacts of over-indebtedness on the monetary policy transmission in China

4.3 Transmission of China's Monetary Policy in Times of High Indebtedness

Furthermore, we examine the transmission of China's monetary policy in the presence of over-indebtedness in terms of identified monetary instruments and measure the debt effects on the real economy. In accordance with Sun (2019), in which the fiscal space framework and the threshold approach in accordance with Hansen (2000) are employed to seek the critical value for the over-indebtedness in the public and private sector, respectively. We define the over-indebtedness in public sector when the public debt level is higher than its long-run sustainable level: 28% (to GDP), and define the over-indebtedness in the non-financial private sector as follows: debt-to-GDP ratio above 115% for the non-financial corporate sector, and debt-to-GDP ratio above 20% for the household sector. The dummy

variable, odd_t , as the measure of the over-indebtedness, takes 1 when the above standards are satisfied and 0 otherwise.

Applying equation (2) with the GMM estimation, we obtain the results in Table 6 in the Appendix. Columns 2 and 3 in Table 6 show the case of the consumption for China's monetary policy transmission without and with the household debt, respectively. Incorporating the debt variable and the over-indebtedness in the household sector into the regression, we find that the effects of interbank rates on the growth rate of consumption remain significant and negative, but the magnitude of the effects falls from -0.2694 to -0.2292, and the significance is reduced from 5% to 10%, which suggests that the effects of China's monetary policy has little change in the state of higher household indebtedness. This conclusion is also supported by the insignificant effects of household debt (positive) and of over-indebtedness (negative).

However, results from the case of investment for China's monetary policy transmission (Columns 4 and 5) indicate that the over-indebtedness in the non-financial corporate sector has remarkably mitigated the effects of the growth rate of M2 on the investment growth, which become insignificant when introducing the debt variables. Particularly, the significantly negative coefficients in row 10 (Column 5) demonstrates that higher corporate indebtedness can dramatically reduce the effects of monetary policy on the investment growth. These results suggest that the responsiveness of the investment growth to monetary policy has changed and has likely weakened since the non-financial corporate sector lies in the state of over-indebtedness in China.

In the third scenario (Columns 6 and 7 in Table 6), we find that public debt significantly

affects the public spending (positively), and the over-indebtedness in the public sector changes the effects of the RRR from the significance to the insignificance, suggesting the public over-indebtedness would weaken the monetary policy transmission.

5. Robustness Checks with a VAR model

We repeat the three experiments in Section 4 with a VAR model². In doing so, first we use the VAR approach to simulate equation (1), then we add the debt variable and the over-indebtedness variable into the VAR model just like in equation (2).

5.1 Effects of Household Debt on Consumption and Monetary Policy Transmission

Figure 11 illustrates the effects of monetary policy on the consumption growth without and with debt variables, and the effects of debt on the consumption growth. In Panel A of Figure 11, 1% rise in the interest rate due to one S.D. innovation reduces the growth rate of consumption by 0.6%, while when debt variables are added into the VAR model in Panel B, 1% rise in the interest rate cause the growth rate of consumption fall 0.42% at maximum. This suggests that the existence of household debt has somehow reduced the effects of monetary policy on the consumption growth, although the magnitude is minimal. In addition, we measure the effects of household debt on the consumption growth in Panel C, which indicates that 0.3% rise in the household debt level would decrease the growth rate of consumption by approximately 0.1% immediately, and eventually by 0.5% in two years later.

5.2 Effects of Firm Debt on Investment and Monetary Policy Transmission

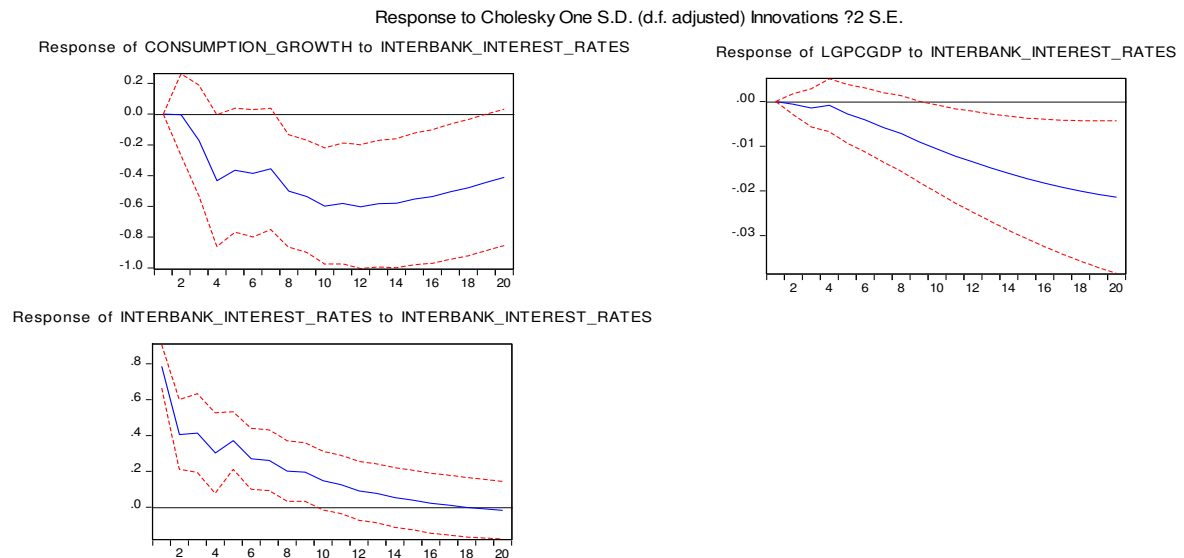
Figure 12 plots the responses of the investment growth to the shocks from the growth rate of M2 and the firm debt. Panel A shows that one standard deviation shock increases the M2

² For a detailed discussion on applying a VAR model, see for example, Sun et al. (2010).

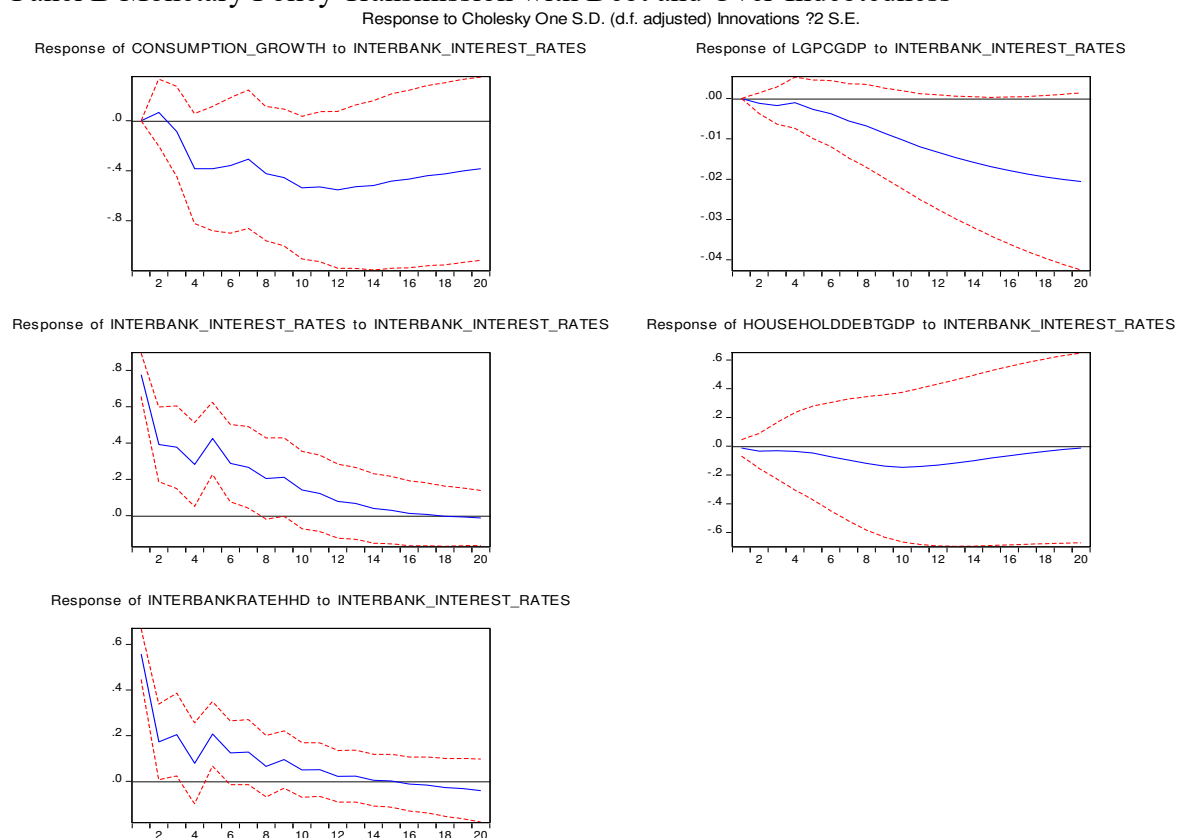
growth by 1.7%, and thereby increases the investment growth by 0.4% soon. In Panel B when debt and overindebted variables are added, however, the increase in the investment growth due to one S.D shock from the M2 growth becomes slow and weak in the short term.

Figure 11 Effects of Household Debt on Consumption and Monetary Policy Transmission

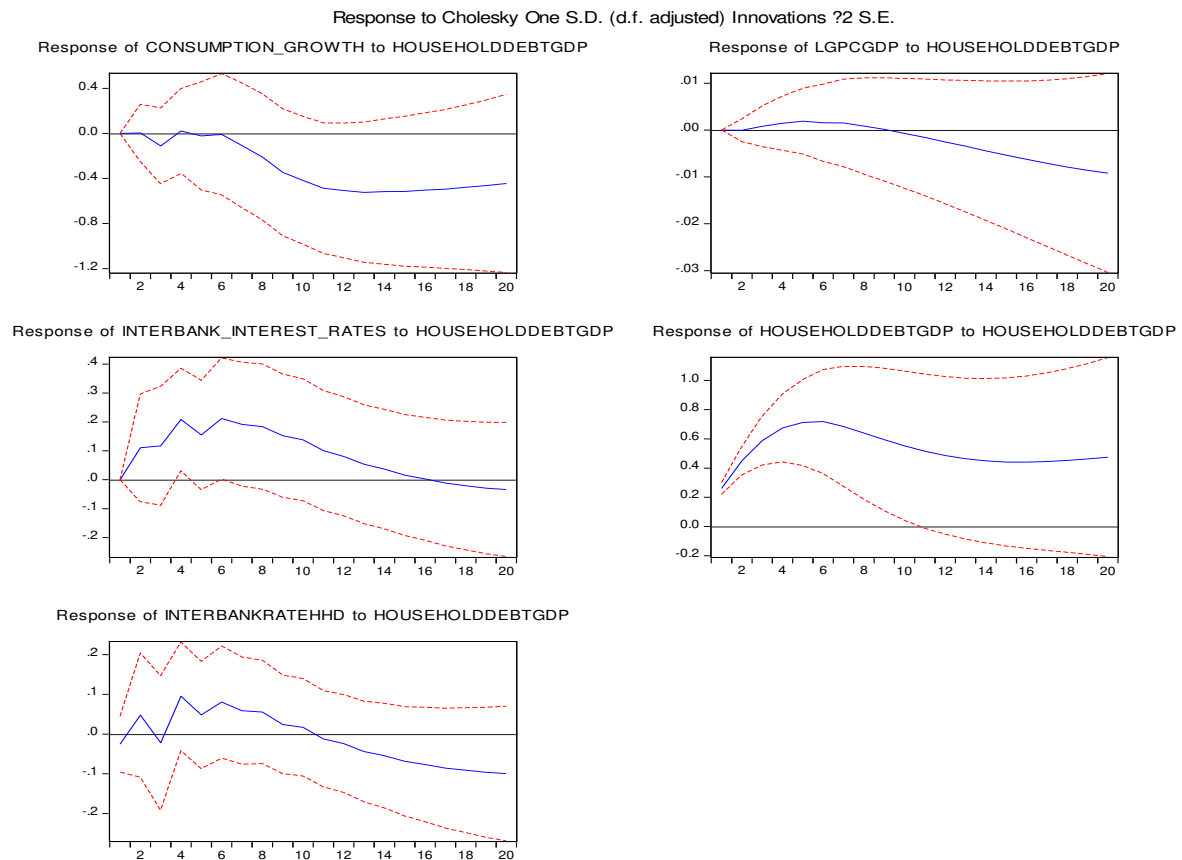
Panel A Monetary Policy Transmission Without Debt



Panel B Monetary Policy Transmission with Debt and Over-Indebtedness



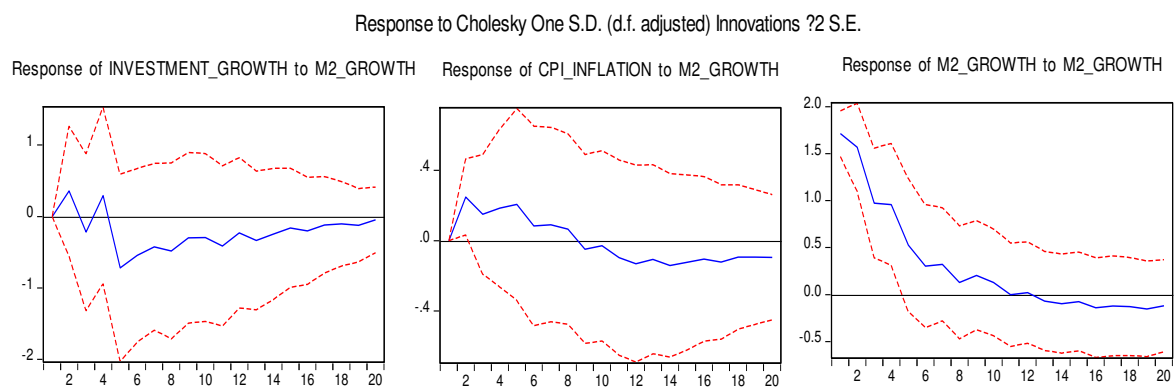
Panel C Effects of Household Debt on Consumption



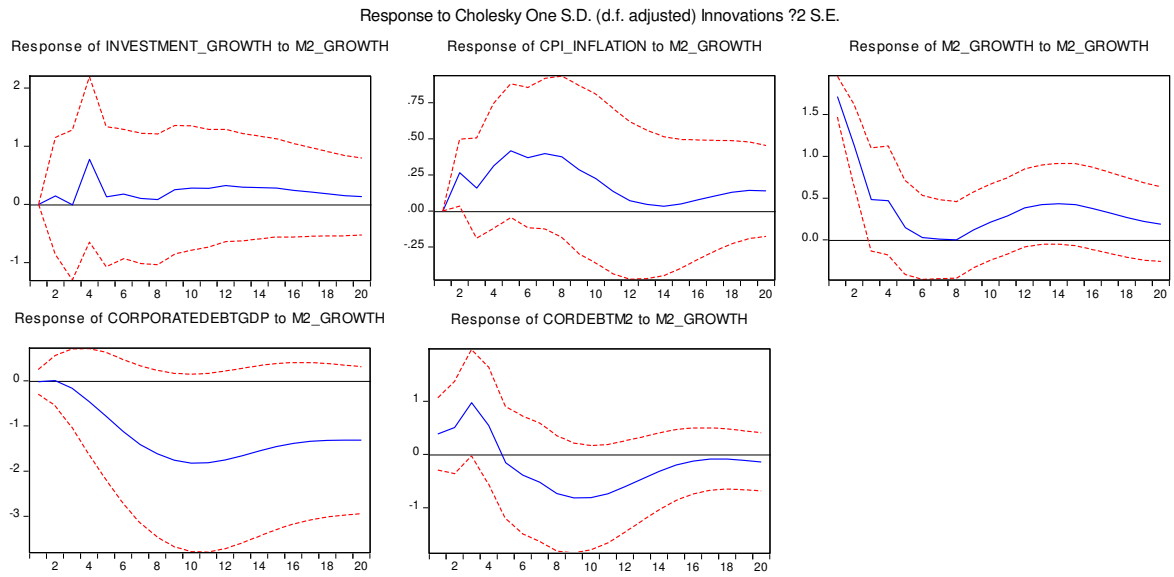
In Panel C of Figure 12, one S.D. shock to the firm debt level increases the non-financial corporate debt level by 0.4%, and then increases the growth rate of investment initially, but eventually decreases the investment growth by approximately 0.15%.

Figure 12 Effects of Firm Debt on Investment and Monetary Policy Transmission

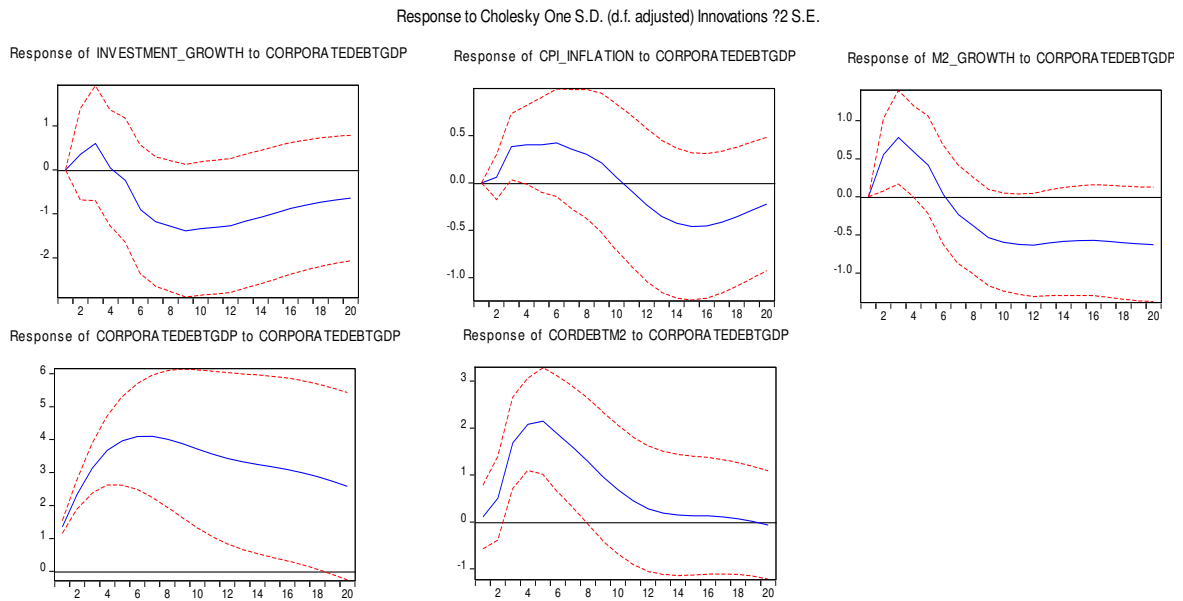
Panel A Monetary Transmission without Firm Debt



Panel B Monetary Transmission with Firm Debt and Over-Indebtedness



Panel C Effects of Firm Debt on Investment

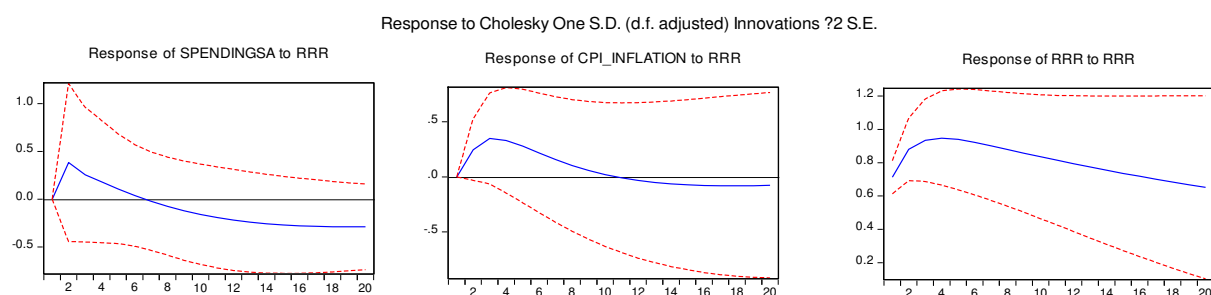


5.3 Effects of Public Debt on Public Spending and Monetary Policy Transmission

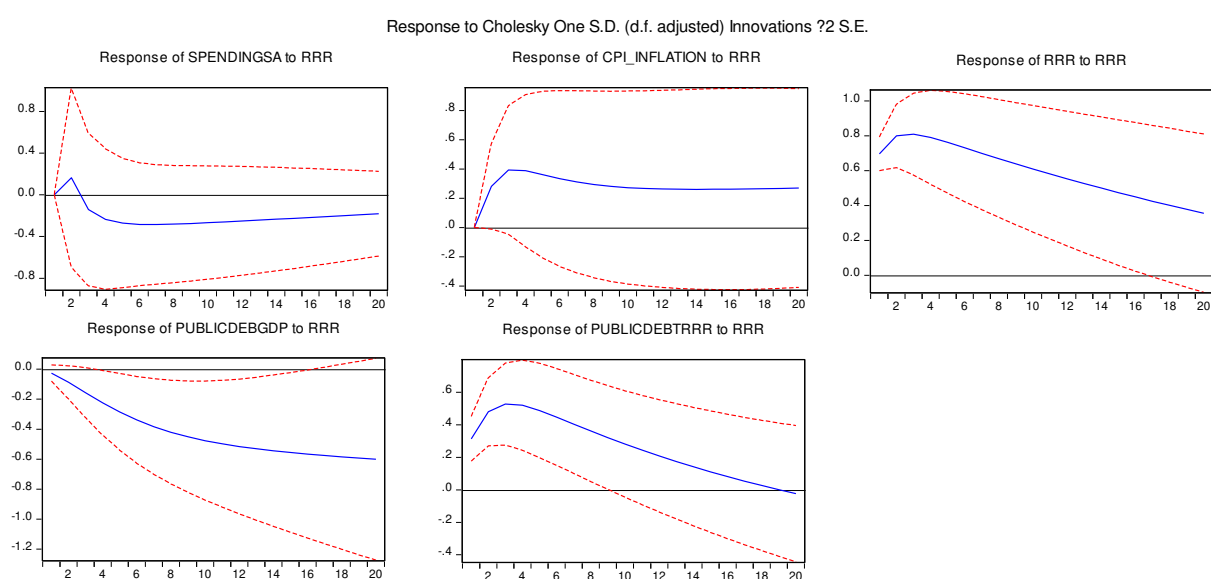
We report the results from the case of public spending in Figure 13. Panel A suggests that one S.D. innovation to the RRR increases the RRR by 1% point, which increases the public spending by approximately 0.38% point. In Panel B with the existence of public debt variables, one S.D. shock to the RRR, only lead to the rise in the public spending by 0.17% point. In Panel C, one S.D shock to public debt raises the public spending by 0.14%.

Figure 13 Effects of Public Debt on Public Spending and Monetary Policy Transmission

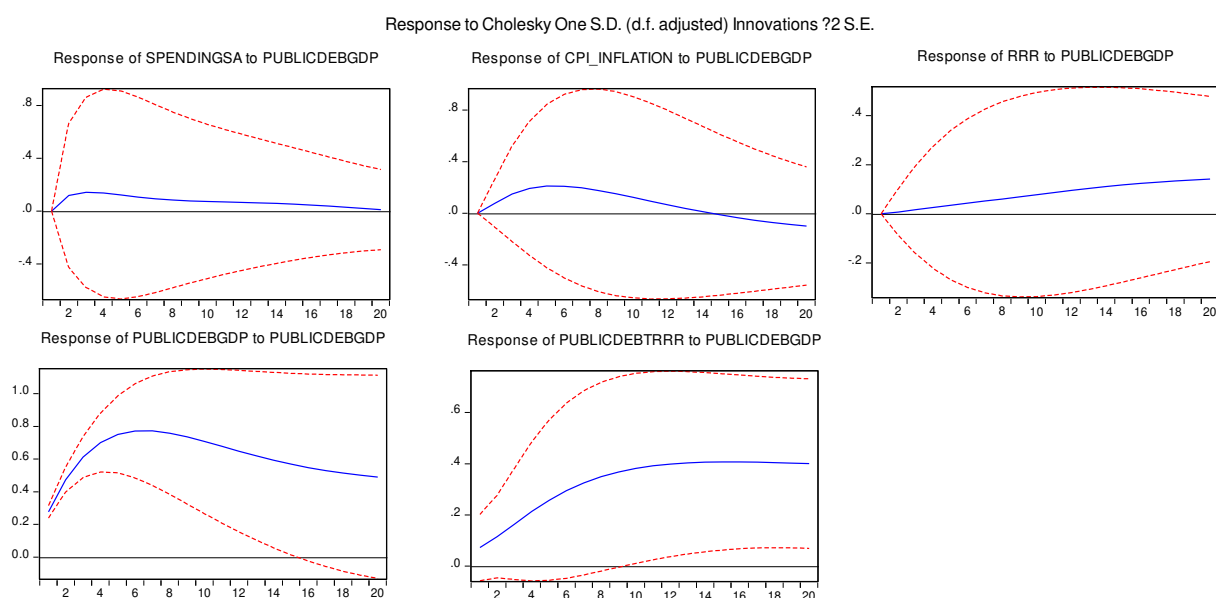
Panel A Monetary Policy Transmission without Public Debt



Panel B Monetary Policy Transmission without Public Debt



Panel C Effects of Public Debt on Public Spending



These results from the VAR model prove our findings in Section 4: public debt and non-financial private debt do affect the real economic activities, and more importantly, the over-indebtedness both in the public sector and the non-financial private sector have weakened the monetary policy transmissions in China.

6. Concluding Remarks

Debt and leverage, whether at the micro or macro level, have important implications to economic sustainability and stability. Our China Debt dataset and its update, spanning the entire period 1985-2018 and covering almost all debt categories with the estimated quarterly series, provide a powerful tool for studying debt problem and the regarding policy design for Chinese economy. In addition, this update suggests that certain important changes have occurred: the debt levels (relative to GDP) for all sectors have declined since 2016, which reflects the positive effects of the deleveraging policy implemented by the Chinese government.

Furthermore, Using the quarterly series from 1990q1 to 2017q4 with the GMM approach, we've investigated the effects of public and non-financial private debt and the change of monetary policy transmission in times of over-indebtedness. We find that non-financial private debt (household debt and non-financial corporate debt) has little effect on consumption and investment, while the public debt can significantly prompt the public spending in China. More importantly, the over-indebtedness in the non-financial corporate sector and public sector have weakened the effects of China's monetary policy on the consumption, investment and public spending growths, although the higher household indebtedness has little impact on China's monetary policy transmission. Moreover, our

robustness checks based on the VAR model support our above findings.

There are some limitations to our analysis which need further in-depth studies. The main one is to explore the mechanism behind the link of the indebtedness and monetary policy transmission. In addition, given the adverse effects of higher indebtedness on the economic growth and financial stability, how to deleverage China's debt level through macroeconomic policies is an important and promising research topic.

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Appendix

Table 1 China's Debt Database: Annual Data for All Sectors (Unit: 100 Million Yuan RMB)

Year	Public Debt								Total Public Debt	Private Debt									Total External Debt	Total Domestic Debt	Total Debt
	Central Government			Local Governments			Public External	Public Domestic	General Government	Financial Domestic Debt	Financial External Debt	Total Financial Debt	Shadow Banking Debt	Household Debt	Non-Financial Corporate Debt	Non-Financial Private External Debt	Total Domestic Non-Financial Private Debt				
	Domestic	External	Total	Domestic	External	Total															
1985	238.00	62.11	300.11	62.00	82.83	144.83	144.94	300.00	444.94	6198.38	144.94	6343.32		1334.15	4746.80	211.33	6080.95	506.80	12579.33	13086.13	
1986	293.60	47.01	340.61	36.40	181.65	218.05	228.66	330.00	558.66	8142.72	228.66	8371.38		1441.00	6198.88	333.39	7962.85	799.51	16112.60	16912.10	
1987	391.80	50.17	441.97	38.20	271.32	309.52	321.49	430.00	751.49	9814.09	321.49	10135.58		1547.84	8142.72	468.74	9486.94	1124.07	19934.65	21058.73	
1988	558.50	127.99	686.49	111.50	297.82	409.32	425.81	670.00	1095.81	11964.25	425.81	12390.06		1654.69	9495.00	620.85	11233.69	1488.84	23783.94	25272.78	
1989	771.40	353.24	1124.64	328.60	204.53	533.13	557.77	1100.00	1657.77	14248.81	557.77	14806.58		1761.54	12924.00	813.24	15152.05	1950.23	30034.35	31984.57	
1990	890.30	454.10	1344.40	409.70	330.75	740.45	784.85	1300.00	2084.85	17511.02	784.85	18295.87		1868.38	13637.00	1144.34	18230.69	2744.21	34316.40	37060.62	
1991	1060.00	617.32	1677.32	560.00	323.90	883.90	941.21	1620.00	2561.21	21116.40	941.21	22057.61		1975.23	19418.00	1372.33	22058.97	3290.95	44129.63	47420.58	
1992	1282.70	778.22	2060.92	694.65	362.11	1056.76	1140.32	1977.35	3117.67	25742.81	1140.32	26883.13		2082.08	23576.00	1662.64	30449.27	3987.15	53378.24	57365.38	
1993	1540.70	939.12	2479.82	829.30	447.14	1276.44	1386.26	2370.00	3756.26	32955.83	1386.26	34342.09		2188.92	27697.00	2021.22	39842.72	4847.06	65211.75	70058.81	
1994	2286.40	795.70	3082.10	673.60	1446.23	2119.83	2241.93	2960.00	5201.93	39975.99	2241.93	42217.92		2295.77	40142.00	3268.83	48521.99	7838.92	85373.76	93212.68	
1995	3300.30	579.60	3879.90	429.70	1955.93	2385.63	2535.54	3730.00	6265.54	50544.09	2535.54	53079.63		2402.61	52019.00	3696.92	60379.79	8865.52	108695.70	117561.22	
1996	4361.40	672.09	5033.49	468.60	2087.44	2556.04	2759.54	4830.00	7589.54	61156.55	2759.54	63916.09		2509.46	64016.73	4023.52	74160.87	9648.73	132512.74	142161.47	
1997	5508.90	683.78	6192.68	1161.45	2417.38	3578.83	3101.16	6670.35	9771.51	74914.07	3101.16	78015.23		2616.31	76956.56	4521.63	86305.06	10843.23	161157.29	172000.51	
1998	7765.70	677.69	8443.39	1854.30	2798.12	4652.42	3475.81	9620.00	13095.81	86524.13	3475.81	89999.94		2723.15	89440.00	5167.30	97274.28	12090.48	188307.28	200397.76	
1999	10542.00	668.89	11210.89	3412.03	3247.08	6659.11	3915.97	13954.03	17870.00	93734.28	3386.45	97120.73		2830.00	99930.00	5268.32	106384.64	12570.74	210448.31	223019.05	
2000	13020.00	644.30	13664.30	4591.34	3408.66	8000.00	4052.96	17611.34	21664.30	99371.07	2943.37	102314.44		3113.00	111370.00	5066.10	111660.56	12062.43	231465.41	243527.84	
2001	15618.00	626.36	16244.36	8502.96	3497.04	12000.00	4123.39	24120.96	28244.36	112314.70	4261.12	116575.82		9379.75	114540.00	8442.48	138852.10	16827.00	260355.41	277182.41	
2002	19336.00	618.08	19954.08	12436.19	3563.81	16000.00	4181.89	31772.19	35954.08	131293.93	4247.65	135541.58	6110.00	14932.31	143020.00	8343.00	171762.16	16772.54	327128.43	343900.97	
2003	22603.00	620.03	23223.03	16252.77	3747.23	20000.00	4367.27	38855.77	43223.03	158996.23	4847.79	163844.02	8730.00	20769.23	172700.00	8940.71	194209.36	18155.77	400051.23	418207.00	

2004	25777.60	644.75	26422.35	21864.58	2135.42	24000.00	2780.18	47642.18	50422.35	178197.78	8078.14	186275.92	11590.00	28180.00	192980.00	10908.05	213641.09	21766.37	458589.96	480356.33
2005	31848.59	765.52	32614.11	26401.72	1898.28	28300.00	2663.80	58250.31	60914.11	194690.39	8222.36	202912.75	12590.00	31590.00	205950.00	13045.21	252388.13	23931.37	503070.70	527002.07
2006	34380.24	635.02	35015.26	33652.43	2047.57	35700.00	2682.59	68032.67	70715.26	225347.20	9370.18	234717.38	17970.00	38280.00	239540.00	14386.70	305720.68	26439.48	589169.87	615609.34
2007	51467.39	607.26	52074.65	43258.99	1941.01	45200.00	2548.27	94726.38	97274.65	261690.88	9249.39	270940.27	29700.00	50650.00	285720.00	16633.30	314282.94	28430.96	722487.26	750918.23
2008	52799.32	472.22	53271.54	53997.19	1802.81	55800.00	2275.03	106796.51	109071.54	303467.77	8632.30	312100.07	38100.00	57060.00	325640.00	15758.54	368830.31	26665.88	831064.28	857730.15
2009	59736.95	500.73	60237.68	61264.20	2015.80	63280.00	2516.53	121001.15	123517.68	399685.00	9041.82	408726.82	53730.00	81790.00	437010.00	17710.73	505957.17	29269.08	1093216.15	1122485.23
2010	66987.97	560.14	67548.11	65100.32	2009.19	67109.51	2569.33	132088.29	134657.62	479196.00	12151.70	491347.70	92110.00	112540.00	521660.00	21635.26	619246.10	36356.30	1337594.29	1373950.58
2011	71410.80	633.71	72044.51	79974.59	1720.67	81695.26	2354.38	151385.39	153739.77	547946.69	16758.42	564705.11	111940.00	136010.00	600630.00	24672.20	734126.13	43785.00	1547912.08	1591697.08
2012	76747.91	817.79	77565.70	94797.58	1483.42	96281.00	2301.21	171545.49	173846.70	629909.64	16127.42	646037.06	142830.00	161300.00	694350.00	27891.20	884084.40	46319.82	1799935.13	1846254.95
2013	85836.05	910.86	86746.91	120264.08	1172.39	121436.47	2083.25	206100.13	208183.38	718961.46	19884.96	738846.42	291760.00	198500.00	796460.00	30417.57	1059184.49	52385.79	2211781.59	2264167.38
2014	94676.31	979.14	95655.45	148040.19	5959.81	154000.00	6938.95	242716.50	249655.45	867867.00	25087.62	892954.62	365670.00	229215.60	997200.43	22766.63	1226416.03	54793.20	2702669.53	2757462.73
2015	105467.48	1132.11	106599.59	154194.12	5805.88	160000.00	6937.99	259661.60	266599.59	993459.69	39741.00	1033200.69	458180.00	267325.90	1155244.00	43147.58	1422569.90	88200.94	3133871.19	3222072.13
2016	118811.24	1255.51	120066.75	145884.11	7315.89	153200.00	8571.40	264695.35	273266.75	1120551.79	45638.05	1166189.84	524230.00	329543.70	1235089.80	68924.03	1564633.50	123133.48	3474110.64	3597244.12
2017	133447.43	1322.72	134770.15	155012.61	9693.39	164706.00	11016.11	288460.04	299476.15	1256073.74	56739.17	1312812.91	564820.00	399669.14	1323790.87	47042.12	1723460.01	114797.40	3832813.79	3947611.19
2018	148208.60	1398.80	149607.40	169318.05	14543.95	183862.00	15942.75	317526.65	333469.40	1417516.00	63709.23	1481225.23	460550.00	472762.00	1362756.22	55219.70	1835518.22	134871.68	4031110.87	4165982.55

Table 2 Leverage Ratios for All Sectors Based on the Disaggregated Quarterly Series (%)

Date	Public Debt/ NGDP	Household Debt /NGDP	Non-Financial Private Debt /NGDP	Total Non-Financial Domestic Debt/GDP	Total Domestic Debt/ NGDP	Total External debt /NGDP	Total Debt /NGDP	Household Debt/ Household Disposable Income	Non-Financial Firm Debt /Firm Revenue	Central Government Debt/Central Government Fiscal Revenue	Local Government Debt /Local Fiscal Revenue	Public Debt /National Fiscal Revenue	Total External Debt /Total Foreign Reserves
31.03.1985	4.57	15.49	63.99	66.03	123.72	3.60	127.32	28.02	57.91	26.90	7.33	15.03	294.05
30.06.1985	4.69	15.20	65.86	67.52	128.97	4.31	133.28	27.41	58.73	28.26	6.53	15.00	385.26
30.12.1985	4.77	14.86	67.28	68.58	133.21	4.94	138.16	26.85	59.45	29.61	5.76	14.98	486.26
30.09.1985	5.00	14.98	70.67	71.67	141.29	5.69	146.98	26.34	60.09	30.92	5.02	14.96	598.71
31.03.1986	5.07	14.67	71.85	72.53	144.86	6.24	151.10	25.86	60.67	32.22	4.31	14.94	724.69
30.06.1986	5.15	14.41	73.26	73.67	148.53	6.76	155.29	25.43	61.40	33.66	3.67	14.99	854.20
30.09.1986	5.28	14.21	75.20	75.36	152.62	7.28	159.90	25.07	62.48	35.43	3.12	15.18	967.03
31.12.1986	5.42	13.99	77.39	77.36	156.39	7.76	164.15	24.79	64.05	37.72	2.71	15.55	1036.68
31.03.1987	5.61	13.78	80.19	80.01	160.36	8.23	168.59	24.58	66.25	40.77	2.45	16.18	1043.68
30.06.1987	5.80	13.51	82.53	82.26	163.23	8.64	171.87	24.37	68.46	44.50	2.35	17.07	1026.50
30.09.1987	6.01	13.19	84.04	83.72	164.98	9.01	173.99	24.07	70.21	48.74	2.41	18.19	1016.08
31.12.1987	6.24	12.86	84.38	84.06	165.58	9.34	174.92	23.64	71.07	53.21	2.61	19.55	1033.19
31.03.1988	6.45	12.43	82.78	82.50	163.95	9.58	173.53	23.01	70.69	57.54	2.97	21.13	1097.61
30.06.1988	6.69	11.98	80.66	80.49	161.69	9.76	171.44	22.31	70.10	61.91	3.70	23.05	1172.15
30.09.1988	6.97	11.51	78.99	79.02	159.70	9.87	169.57	21.62	70.19	66.64	5.01	25.46	1214.77
31.12.1988	7.30	11.03	78.46	78.79	158.54	9.92	168.46	21.02	71.74	72.09	7.05	28.42	1186.24
31.03.1989	7.86	10.75	81.20	81.95	161.87	10.11	171.98	20.55	75.39	78.72	9.89	32.01	1076.24
30.06.1989	8.48	10.55	84.92	86.10	166.58	10.38	176.96	20.16	79.75	85.41	12.93	35.66	946.50
30.09.1989	9.14	10.43	88.68	90.21	172.01	10.83	182.84	19.80	83.64	90.88	15.69	38.88	831.99
31.12.1989	9.72	10.33	90.86	92.54	176.08	11.43	187.51	19.44	86.08	93.78	17.84	41.28	744.14
31.03.1990	10.32	10.39	91.76	93.35	180.37	12.42	192.79	19.05	86.14	93.03	19.12	42.52	683.13
30.06.1990	10.81	10.42	91.35	92.69	183.30	13.47	196.77	18.67	84.74	90.91	19.89	43.13	621.62
30.09.1990	11.15	10.35	90.50	91.55	185.00	14.36	199.36	18.33	82.79	89.31	20.46	43.57	551.19

31.12.1990	11.22	10.05	89.58	90.42	184.63	14.76	199.39	18.08	81.21	89.71	21.07	44.26	473.72
31.03.1991	11.41	9.87	92.67	93.50	189.25	15.07	204.31	17.93	80.76	93.62	21.95	45.59	394.97
30.06.1991	11.51	9.59	96.50	97.41	193.59	15.08	208.67	17.82	80.86	99.80	23.00	47.34	335.90
30.09.1991	11.72	9.40	101.60	102.64	199.97	15.18	215.16	17.68	81.00	106.88	24.14	49.35	297.93
31.12.1991	11.81	9.11	104.97	106.11	203.48	15.17	218.65	17.48	80.84	112.98	25.33	51.44	278.92
31.03.1992	11.54	8.55	103.42	104.55	198.83	14.81	213.64	17.16	80.12	115.81	26.56	53.43	278.53
30.06.1992	11.35	8.09	101.46	102.56	194.79	14.58	209.37	16.75	78.93	117.91	27.58	55.13	291.46
30.09.1992	11.04	7.60	97.87	98.94	188.90	14.19	203.09	16.29	77.36	121.94	28.06	56.30	316.71
31.12.1992	11.40	7.62	99.94	101.09	195.26	14.59	209.85	15.79	75.44	130.95	27.74	56.77	356.53
31.03.1993	11.09	7.23	96.07	97.31	191.36	14.01	205.37	15.29	73.24	150.50	26.55	56.38	417.95
30.06.1993	10.81	6.87	92.67	93.97	188.03	13.53	201.57	14.72	71.52	173.43	25.33	55.63	475.65
30.09.1993	10.62	6.51	90.38	91.61	185.33	13.35	198.69	14.08	70.94	182.02	24.53	54.90	473.57
31.12.1993	10.53	6.13	89.41	90.39	182.74	13.58	196.32	13.33	71.98	160.91	24.45	54.50	394.22
31.03.1994	10.55	5.74	89.96	90.47	180.08	14.29	194.37	12.50	75.07	123.15	25.49	54.66	296.85
30.06.1994	10.63	5.36	91.28	91.29	177.85	15.11	192.96	11.68	79.26	97.65	27.18	55.20	235.62
30.09.1994	10.70	5.02	92.82	92.41	176.39	15.79	192.18	10.91	83.74	84.02	28.84	55.93	200.30
31.12.1994	10.70	4.72	93.98	93.34	175.53	16.12	191.65	10.25	87.82	78.67	29.14	56.73	179.79
31.03.1995	10.64	4.49	94.86	94.24	176.13	16.03	192.16	9.68	90.93	80.24	26.39	57.45	168.29
30.06.1995	10.51	4.28	95.12	94.66	176.70	15.61	192.32	9.20	93.46	85.62	22.08	58.17	160.08
30.09.1995	10.36	4.09	95.05	94.84	177.18	15.05	192.23	8.77	95.79	93.20	17.81	58.92	152.68
31.12.1995	10.22	3.92	94.81	94.86	177.31	14.46	191.77	8.39	98.27	101.34	14.39	59.75	144.83
31.03.1996	10.19	3.79	95.29	95.60	178.41	14.06	192.47	8.04	101.19	107.88	12.07	60.70	135.96
30.06.1996	10.27	3.68	96.30	96.86	180.35	13.80	194.16	7.74	104.34	112.85	10.90	61.86	126.97
30.09.1996	10.42	3.60	97.59	98.42	182.89	13.64	196.53	7.49	107.49	116.49	11.00	63.34	118.44
31.12.1996	10.57	3.49	98.24	99.37	184.53	13.44	197.96	7.29	110.43	119.13	12.51	65.20	110.71
31.03.1997	10.88	3.43	99.82	101.28	188.33	13.40	201.74	7.15	112.92	121.11	15.56	67.51	103.91
30.06.1997	11.27	3.38	101.63	103.46	192.79	13.44	206.23	7.05	115.32	123.21	19.31	70.26	98.63
30.09.1997	11.74	3.33	103.60	105.85	197.61	13.52	211.12	6.97	117.98	126.09	23.06	73.46	95.14
31.12.1997	12.26	3.28	105.48	108.18	202.14	13.60	215.74	6.89	121.29	130.33	26.25	77.10	93.62
31.03.1998	12.88	3.24	107.92	111.10	207.46	13.77	221.23	6.81	125.62	136.41	28.40	81.22	94.31

30.06.1998	13.64	3.22	110.60	114.36	213.11	13.98	227.08	6.74	130.47	143.61	30.42	85.92	96.27
30.09.1998	14.48	3.20	112.88	117.32	217.93	14.14	232.07	6.71	135.28	151.27	33.12	91.30	98.70
31.12.1998	15.38	3.20	114.30	119.53	221.14	14.20	235.33	6.72	139.43	158.74	37.21	97.41	100.75
31.03.1999	16.49	3.24	115.74	121.95	224.53	14.27	238.80	6.79	142.23	165.48	43.29	104.25	101.55
30.06.1999	17.68	3.28	117.11	124.44	227.79	14.28	242.07	6.83	143.71	171.35	50.04	111.04	101.26
30.09.1999	18.82	3.26	118.38	126.86	230.61	14.17	244.78	6.75	143.95	176.27	56.28	117.11	100.07
31.12.1999	19.74	3.13	119.36	128.96	232.52	13.89	246.41	6.47	143.06	180.23	60.98	121.93	98.16
31.03.2000	20.31	2.84	119.82	130.39	232.90	13.36	246.26	5.90	141.23	183.22	63.24	125.04	95.65
30.06.2000	20.70	2.61	119.91	131.30	232.42	12.77	245.19	5.48	138.72	185.23	64.79	127.24	92.87
30.09.2000	21.08	2.64	119.71	131.75	231.62	12.29	243.91	5.59	135.72	186.26	67.17	129.20	90.19
31.12.2000	21.61	3.11	119.27	131.79	230.93	12.03	242.97	6.62	132.34	186.29	71.67	131.47	88.02
31.03.2001	22.33	4.14	118.13	130.89	229.71	12.09	241.80	8.88	128.63	185.35	79.25	134.52	86.74
30.06.2001	23.27	5.51	117.44	130.45	229.65	12.32	241.97	11.86	125.25	184.01	88.56	138.21	85.47
30.09.2001	24.35	7.02	117.79	131.23	231.39	12.58	243.97	15.09	122.90	182.75	98.66	142.45	83.46
31.12.2001	25.47	8.46	119.35	133.48	234.75	12.70	247.45	18.11	122.20	181.97	108.97	147.20	80.18
31.03.2002	26.66	9.67	123.06	138.38	245.01	12.58	257.59	20.53	123.74	181.96	119.25	152.51	75.25
30.06.2002	27.76	10.68	127.61	144.29	252.93	12.30	265.23	22.51	126.35	182.68	129.21	157.98	69.72
30.09.2002	28.72	11.53	132.29	150.34	261.01	11.95	272.96	24.20	128.96	184.07	138.36	163.27	64.38
31.12.2002	29.56	12.28	136.71	155.97	268.92	11.66	280.58	25.72	130.63	186.13	146.05	168.07	59.83
31.03.2003	30.20	12.94	140.13	160.27	275.68	11.52	287.20	27.23	130.62	188.86	151.57	172.08	56.48
30.06.2003	30.87	13.67	143.61	164.50	282.97	11.55	294.52	28.77	128.89	191.16	155.94	175.26	53.66
30.09.2003	31.29	14.38	145.98	167.40	288.18	11.61	299.79	30.41	125.50	192.00	160.13	177.56	50.93
31.12.2003	31.50	15.13	147.50	169.30	291.53	11.68	303.20	32.19	120.62	190.50	165.00	178.93	48.02
31.03.2004	31.51	15.96	148.26	170.36	292.92	11.71	304.63	34.13	114.54	185.98	171.32	179.36	44.79
30.06.2004	31.28	16.63	147.35	169.59	290.90	11.68	302.57	35.96	108.22	181.05	177.45	179.43	41.79
30.09.2004	31.14	17.15	145.79	168.23	287.76	11.67	299.42	37.46	102.27	177.77	182.01	179.67	39.32
31.12.2004	31.22	17.45	143.68	166.43	283.93	11.71	295.65	38.41	97.02	177.74	183.84	180.49	37.48
31.03.2005	31.61	17.46	141.06	164.27	279.68	11.84	291.52	38.65	92.61	182.32	182.10	182.22	36.33
30.06.2005	32.10	17.31	138.40	162.09	275.62	11.98	287.60	38.48	88.84	188.20	178.95	183.91	35.55
30.09.2005	32.50	17.10	136.06	160.12	272.17	12.10	284.27	38.17	85.60	192.46	176.09	184.74	34.93

31.12.2005	32.57	16.89	134.00	158.18	269.02	12.13	281.15	37.95	82.86	192.46	174.84	184.05	34.32
31.03.2006	32.26	16.80	132.89	156.87	267.27	12.05	279.32	38.02	80.60	185.96	176.21	181.29	33.59
30.06.2006	31.85	16.82	132.29	156.05	266.28	11.88	278.16	38.43	78.80	177.31	178.89	178.07	32.68
30.09.2006	31.82	17.06	132.70	156.59	267.28	11.71	278.99	39.22	77.41	170.32	181.77	175.77	31.58
31.12.2006	32.31	17.49	133.49	158.00	269.16	11.52	280.68	40.39	76.39	168.06	183.86	175.52	30.29
31.03.2007	33.38	18.03	133.99	159.68	270.72	11.29	282.01	41.94	75.69	172.61	184.38	178.11	28.85
30.06.2007	34.63	18.53	134.00	161.06	271.58	11.00	282.58	43.42	74.85	179.18	184.09	181.46	27.37
30.09.2007	35.66	18.83	133.16	161.42	271.03	10.63	281.66	44.46	73.54	184.28	183.64	183.98	25.90
31.12.2007	36.13	18.81	131.11	160.12	268.35	10.14	278.48	44.75	71.48	185.47	183.51	184.57	24.45
31.03.2008	35.87	18.41	127.88	157.02	263.60	9.53	273.13	44.05	68.52	180.90	184.10	182.37	22.99
30.06.2008	35.14	17.90	124.54	153.39	258.46	8.89	267.34	43.15	65.91	173.77	185.21	179.06	21.58
30.09.2008	34.42	17.61	122.93	151.46	256.27	8.34	264.61	42.69	64.54	166.61	186.70	175.94	20.30
31.12.2008	34.20	17.89	124.95	153.50	260.60	8.03	268.63	43.23	65.13	161.56	188.47	174.13	19.25
31.03.2009	34.65	18.94	131.47	160.52	272.88	8.00	280.88	45.29	68.40	160.62	190.46	174.62	18.53
30.06.2009	35.26	20.42	139.96	169.55	288.46	8.11	296.57	48.38	72.98	162.10	191.63	176.02	18.08
30.09.2009	35.62	22.02	148.12	178.00	303.24	8.27	311.52	52.06	77.51	164.47	191.04	177.05	17.88
31.12.2009	35.50	23.51	154.21	183.90	314.23	8.41	322.65	55.90	80.55	166.33	187.91	176.60	17.87
31.03.2010	34.79	24.70	157.03	185.98	319.47	8.49	327.96	59.48	80.78	166.38	181.65	173.69	18.01
30.06.2010	34.00	25.76	158.56	186.69	322.65	8.58	331.23	62.64	79.27	164.82	174.00	169.24	18.30
30.09.2010	33.31	26.69	159.41	186.83	324.73	8.71	333.44	65.21	77.01	161.83	166.48	164.08	18.72
31.12.2010	32.71	27.33	159.30	186.12	324.89	8.83	333.72	67.10	74.76	157.66	160.29	158.95	19.28
31.03.2011	32.23	27.64	158.29	184.72	323.04	8.94	331.98	68.22	73.06	152.53	156.36	154.42	19.97
30.06.2011	31.87	27.74	157.03	183.19	320.39	9.00	329.40	68.81	71.92	147.33	154.05	150.67	20.70
30.09.2011	31.57	27.72	155.81	181.78	317.53	9.00	326.53	69.09	71.34	142.70	152.81	147.77	21.35
31.12.2011	31.51	27.88	156.04	182.01	317.26	8.97	326.23	69.23	71.35	139.13	152.20	145.74	21.85
31.03.2012	31.52	28.16	157.36	183.37	318.80	8.86	327.66	69.40	71.99	137.01	151.84	144.57	22.08
30.06.2012	31.63	28.58	159.30	185.41	321.99	8.73	330.71	69.74	72.95	136.04	152.05	144.26	22.16
30.09.2012	31.91	29.21	161.85	188.21	327.55	8.63	336.18	70.40	73.95	135.97	153.09	144.83	22.19
31.12.2012	32.25	29.92	163.90	190.55	333.89	8.59	342.49	71.47	74.72	136.62	155.21	146.30	22.25
31.03.2013	32.72	30.78	165.46	192.53	341.67	8.67	350.34	73.06	75.01	137.83	158.59	148.72	22.45

30.06.2013	33.41	31.76	167.45	195.18	351.47	8.79	360.26	74.90	75.29	139.37	163.02	151.86	22.64
30.09.2013	34.19	32.67	169.71	198.27	361.79	8.87	370.66	76.76	75.96	141.02	168.30	155.51	22.72
31.12.2013	35.05	33.42	172.65	202.23	372.41	8.82	381.23	78.43	77.39	142.59	174.27	159.51	22.59
31.03.2014	36.16	34.11	177.41	208.39	384.84	8.63	393.47	79.73	79.94	143.89	180.82	163.69	22.15
30.06.2014	37.22	34.65	182.79	215.14	397.02	8.41	405.43	80.79	83.26	144.99	187.04	167.61	21.83
30.09.2014	38.12	35.12	188.40	221.88	408.67	8.33	417.00	81.73	87.07	145.94	192.08	170.83	22.07
31.12.2014	38.89	35.71	194.61	228.88	421.05	8.54	429.58	82.66	91.10	146.81	195.15	172.94	23.30
31.03.2015	39.25	36.29	200.08	234.41	431.70	9.13	440.83	83.69	95.13	147.63	195.51	173.56	26.07
30.06.2015	39.31	36.99	205.07	238.89	441.18	10.04	451.22	84.93	98.93	148.67	193.74	173.13	30.21
30.09.2015	39.21	37.91	209.86	242.77	450.12	11.22	461.34	86.51	102.22	150.16	190.36	172.02	35.51
31.12.2015	38.91	39.01	213.91	245.51	457.37	12.57	469.94	88.53	104.71	152.33	185.81	170.59	41.53
31.03.2016	38.46	40.35	217.11	247.08	462.68	14.03	476.71	91.09	106.06	155.45	180.49	169.14	47.56
30.06.2016	37.95	41.81	219.49	247.86	466.56	15.35	481.92	93.98	106.67	158.89	175.14	167.80	52.86
30.09.2016	37.45	43.28	220.91	248.03	469.15	16.31	485.46	97.02	106.94	162.03	170.51	166.67	56.85
31.12.2016	36.98	44.60	221.07	247.57	470.16	16.66	486.83	100.05	107.25	164.20	167.31	165.90	59.12
31.03.2017	36.64	45.71	220.15	246.93	470.28	16.25	486.53	102.90	107.97	164.80	166.26	165.59	59.33
30.06.2017	36.50	46.78	218.99	246.61	470.41	15.47	485.88	105.61	109.20	164.59	166.69	165.72	58.32
30.09.2017	36.48	47.78	217.52	246.16	469.60	14.62	484.22	108.19	111.05	164.29	167.98	166.26	56.92
31.12.2017	36.55	48.78	216.11	245.58	467.84	14.01	481.86	110.69	113.67	164.51	169.51	167.16	55.99
31.03.2018	36.66	49.77	214.63	244.43	464.23	13.88	478.11	113.14	117.27	165.84	170.68	168.40	56.41
30.06.2018	36.76	50.68	212.93	242.66	458.95	14.07	473.02	115.51	121.80	167.96	171.59	169.88	57.80
30.09.2018	36.92	51.64	211.56	241.05	453.68	14.49	468.17	117.81	127.18	170.59	172.32	171.51	59.80
31.12.2018	37.10	52.60	210.36	239.54	448.49	15.01	463.49	120.02	133.31	173.45	172.94	173.18	62.03

Table 3 Effects of China's Monetary Policy on Consumption Growth

(Dependent Variable: Growth Rates of Consumption)

Variables	(1)	(2)	(3)	(4)
Growth of Consumption (-1)	0.9758*** (0.0879) #	0.9441*** (0.0720)	0.8696*** (0.0510)	0.9806*** (0.0476)
p.c. GDP (Log)	0.3041*** (0.1141)	0.1524* (0.0774)	0.1228** (0.0499)	0.0975* (0.0533)
Lending Rates	-0.4574* (0.2623)			
Inter-Bank Rates		-0.2695** (0.1390)		
M2_Growth			0.0172 (0.0470)	
RRR				-0.0544** (0.0218)
Adjusted R ²	0.87	0.88	0.89	0.88

#Standard deviations are in parentheses. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table 4 Effects of China's Monetary Policy on Investment Growth

(Dependent Variable: Growth Rates of Investment)

Variables	(1)	(2)	(3)	(4)
Growth of Investment (-1)	0.9450*** (0.0707) #	1.005*** (0.0330)	0.8988*** (0.0724)	0.9482*** (0.0750)
CPI-Inflation Rate	-0.2441** (0.1005)	-0.3915* (0.2405)	-0.2408** (0.1209)	-0.1727 (0.1304)
Lending Rates	0.2989 (0.2262)			
Inter-Bank Rates		0.1676 (0.1501)		
M2_Growth			0.1656* (0.0982)	
RRR				0.1257 (0.1036)
Adjusted R ²	0.76	0.72	0.78	0.76

#Standard deviations are in parentheses. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table 5 Effects of China's Monetary Policy on Public Spending Growth

(Dependent Variable: Growth Rates of Public Spending)

Variables	(1)	(2)	(3)	(4)
Growth of Public Spending (-1)	0.8919*** (0.1795) #	0.8727*** (0.0597)	0.8315*** (0.0862)	0.8039*** (0.0718)
CPI-Inflation Rate	-0.7554 (1.4112)	-0.6770 (0.8693)	-0.2741 (0.2263)	0.0643 (0.0769)
Lending Rates	0.7300 (0.6778)			
Inter-Bank Rates		1.0636 (0.7287)		
M2_Growth			0.2091* (0.1145)	
RRR				0.2377** (0.1005)
Adjusted R ²	0.10	0.21	0.45	0.46

#Standard deviations are in parentheses. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table 6 Effects of Over-Indebtedness on China's Monetary Policy Transmission

Dependent Variable	Growth of Consumption		Growth of Investment		Growth of Public Spending	
Independent Variables	Without Debt	With Debt	Without Debt	With Debt	Without Debt	With Debt
Lag Dependent Variable	0.9441*** (0.0720) #	0.9512*** (0.0814)	0.8988*** (0.0724)	0.9564*** (0.0405)	0.8039*** (0.0718)	0.8161*** (0.0614)
p.c. GDP (Log)	0.1524* (0.0774)	0.1350** (0.0674)				
CPI-Inflation Rate			-0.2408** (0.1209)	-0.2612** (0.1251)	0.0643 (0.0769)	0.1632** (0.0797)
Inter-Bank Rates	-0.2695** (0.1390)	-0.2292* (0.1285)				
M2_Growth			0.1656* (0.0982)	0.0494 (0.0708)		
RRR					0.2377** (0.1005)	0.0043 (0.0947)
Households Debt (Relative to GDP)		0.0202 (0.0350)				
Non-Financial Corporates Debt (Ratio to GDP)				0.0097 (0.0074)		
Public Debt (Ratio to GDP)						0.1407*** (0.0528)
$odd_t * mi_t$		-0.4303 (0.3704)		-0.1043* (0.0591)		-0.1512 (0.1036)
Adjusted R ²	0.88	0.87	0.78	0.79	0.46	0.52

#Standard deviations are in parentheses. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.